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PTO/SB/05 (03-01)  
Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 8836-138 DIV (IE10162-US)  
First Inventor Tai-Su PARK  
Title Semiconductor Device Having a Trench....  
Express Mail Label No. EV 329488999 US

17537 U.S. PTO  
10/623918  
07/21/03

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 22]  
(preferred arrangement set forth below)
  - Descriptive title of the invention
  - Cross Reference to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to sequence listing, a table, or a computer program listing appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 10]
5. Oath or Declaration [Total Pages 2]
  - a. ☐ Newly executed (original or copy)
  - b. ☒ Copy from a prior application (37 CFR 1.63 (d))  
(for continuation/divisional with Box 18 completed)
    - i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
  - a. ☐ Computer Readable Form (CRF)
  - b. Specification Sequence Listing on:
    - i. ☐ CD-ROM or CD-R (2 copies); or
    - ii. ☐ paper
  - c. ☐ Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement of Power of Attorney (when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 [Copies of IDS Citations]
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: Credit Card Payment Form PTO-2038 for \$750.00

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09, 964,906

Prior application information: Examiner: Owens, Douglas W.

Group Art Unit: 2811

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label (insert Customer No. or Attach bar code label here) or ☐ Correspondence address below

Name Frank Chau, Esq.  
F. CHAU & ASSOCIATES, LLP  
Address 1900 Hempstead Turnpike  
City East Meadow State New York Zip Code 11554  
Country USA Telephone 516-357-0091 Fax 516-357-0092

Name (Print/Type) Thomas W. McNally Registration No. (Attorney/Agent) 48,609  
Signature [Signature] Date 21 July 2003

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

07/21/03

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# FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ ) 750.00

## Complete if Known

Application Number  
Filing Date July 21, 2003  
First Named Inventor Tai-Su PARK  
Examiner Name  
Art Unit  
Attorney Docket No. 8836-138 DIV (IE10162-US)

## METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit  
Account  
Number  
Deposit  
Account  
Name

50-0679

F. Chau & Associates, LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☐ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 750	2001 375	Utility filing fee	750.00
1002 330	2002 165	Design filing fee	
1003 520	2003 260	Plant filing fee	
1004 750	2004 375	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$ ) 750.00

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	12	-20** =	0	x 18	= 0
Independent Claims	2	-3** =	0	x 84	= 0
Multiple Dependent				280	= 0

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 84	2201 42	Independent claims in excess of 3
1203 280	2203 140	Multiple dependent claim, if not paid
1204 84	2204 42	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ ) 0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 410	2252 205	Extension for reply within second month	
1253 930	2253 465	Extension for reply within third month	
1254 1,450	2254 725	Extension for reply within fourth month	
1255 1,970	2255 985	Extension for reply within fifth month	
1401 320	2401 160	Notice of Appeal	
1402 320	2402 160	Filing a brief in support of an appeal	
1403 280	2403 140	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,300	2453 650	Petition to revive - unintentional	
1501 1,300	2501 650	Utility issue fee (or reissue)	
1502 470	2502 235	Design issue fee	
1503 630	2503 315	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 750	2809 375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 750	2810 375	For each additional invention to be examined (37 CFR 1.129(b))	
1801 750	2801 375	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ )

## SUBMITTED BY

(Complete if applicable)

Name (Print/Type) Thomas W. McNally Registration No. 48,609 Telephone 516-357-0091  
Signature [Signature] (Attorney/Agent) Date 21 July 2003

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PATENT

Atty. Docket No. 8836-138 DIV (IE10162-US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAIL STOP PATENT APPLICATIONS

Commissioner for Patents

PO BOX 1450

Alexandria VA 22313-1450

APPLICATION FEE TRANSMITTAL

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): Tai-Su PARK

For: SEMICONDUCTOR DEVICE HAVING A TRENCH ISOLATION  
STRUCTURE AND METHOD FOR FABRICATING THE SAME

This application is a:

☐ Continuation

☐ Continuation-In-Part (CIP)

☒ Divisional

of co-pending U.S. application Serial No. 09/964,906  
filed on September 27, 2001

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this Application transmittal and the documents referred to as enclosed are being deposited with the United States Postal Service on this date **July 21, 2003** in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number **EV 329488999US** addressed to: Mail Stop Patent Application, Commissioner for Patents, PO Box 1450, Alexandria VA 22313-1450.

Thomas W. McNally

(Type or print name of person mailing paper)

(Signatures of person mailing paper)

**Enclosed are:**

- ☒ 15 page(s) of specification
- ☒ 1 page(s) of Abstract
- ☒ 6 page(s) of claims
- ☒ 10 sheets of drawings ☒ formal ☐ informal
- ☒ 2 page(s) of Declaration and Power of Attorney  
(copy as filed in co-pending application no.  
09/964,906, filed September 27, 2001).

☒ Certified copy of applications

<u>Country</u>	<u>Appln. No.</u>	<u>Filed</u>
<u>Korea</u>	<u>2001-15149</u>	<u>23 March 2001</u>

from which priority under Title 35 United States Code, § 119  
is claimed

☐ is enclosed.

☐ will follow.

☒ original filed in co-pending application no.  
09/964,906 filed September 27, 2001

**Additional papers enclosed:**

- ☒ Preliminary Amendment
- ☐ Information Disclosure Statement
- ☐ Form PTO-1449
- ☐ Other

**Fee Calculation (37 C.F.R. §1.16)**

For	Number Filed	Number Extra	Rate	Basic Fee
Total				\$750.00
Claims*	12	-20 = 0	x \$ 18.00	\$ .00
Independent				
Claims	2	-3 = 0	x \$ 84.00	\$ .00
Multiple	[ ] yes	Add'l. Fee	\$280.00	\$
Dependent				
Claims	[X] no	Add'l. Fee	None	= \$ .00
TOTAL				<u>\$750.00</u>

[ ] Verified Statement of "Small Entity" Status Under 37 C.F.R. § 1.27 [ ] is enclosed, [ ] was filed in parent application. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$ .00.

[ ] Please charge fee of \$        For recording the attached Assignment by Credit Card Payment Form PTO-2028 enclosed herewith.

[X] Please charge fee of \$750.00 to cover the filing fee by Credit Card Payment Form PTO-2038 enclosed herewith.

[ ] Charge fee to Deposit Account No. 50-0679 **TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.**

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\* Includes all independent and single dependent claims and all claims referred to in multiple claims. See 37 C.F.R. § 1.75(c).

[X] Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.16 and/or 1.17 at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 50-0679. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-0679 therefor. **TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.**

**Relate Back - 35 U.S.C. § 120**

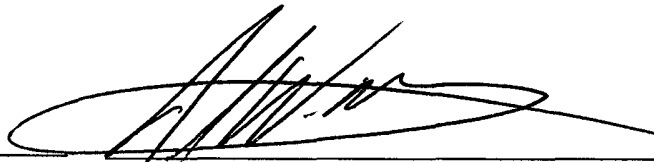
[X] Amend the specification by inserting before the first line the sentence:

"This is a [ ] continuation [ ] continuation-in-part  
[X] divisional of copending application Serial No.  
09/964,906, filed September 27, 2001."

[X] The prior application is assigned of record to  
SAMSUNG ELECTRONICS CO., LTD  
recorded on September 27, 2001 Reel 012223, Frame 0890

Date:

21 July 2003



SIGNATURE OF ATTORNEY  
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Reg. No. 48,609

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